

<b>A. Identification and Coding Information</b>			2. Date: October 1, 2003	7. Pre PDF Pg.No.: 8. Req. Adeq. Pub. Fac.
1. Project Number	Agency Number	Update Code	Revised:	
894832	W-73.12	Change		
3. Project Name: Potomac WFP Hydropneumatic Surge Tanks and Backwash System Impr			5. Agency: <b>WSSC</b>	
4. Program: <b>Sanitation</b>			6. Planning Area: Bi-County	

B. Expenditure Schedule (000's)											
Cost Elements	(8) Total	(9) Thru FY '03	(10) Estimate FY '04	(11) Total 6 Years	(12) Year 1 FY '05	(13) Year 2 FY '06	(14) Year 3 FY '07	(15) Year 4 FY '08	(16) Year 5 FY '09	(17) Year 6 FY '10	(18) Beyond 6 Years
Planning, Design & Supervision	1,977	1,097	383	295	185	110					202
Land											
Site Improvements & Utilities											
Construction	7,325			4,961	2,774	2,187					2,364
Other	1,231		57	789	444	345					385
<b>Total</b>	<b>10,533</b>	<b>1,097</b>	<b>440</b>	<b>6,045</b>	<b>3,403</b>	<b>2,642</b>					<b>2,951</b>

C. Funding Schedule (000's)											
WSSC Bonds	10,533	1,097	440	6,045	3,403	2,642					2,951

**D. Description & Justification****DESCRIPTION**

This project provides for the design and construction of hydropneumatic surge tanks at the Potomac Water Filtration Plant to protect the water distribution system from high and low pressure extremes that result from surge events created by pump trips (power shut-off) at the Plant. Two spherical tanks (estimated 43'-6" diameter) are needed to serve the Prince George's and Montgomery County Main Zones. This project also includes a 36-inch diameter connection from the main zone piping to the filter backwash system, as recommended by the Potomac WFP Reliability Study.

**Service Area** Montgomery High Pressure Zone HG660, Montgomery Main Pressure Zone HG495, Prince George's Main Pressure Zone HG320

**JUSTIFICATION****Plans & Studies**

Project 80 Main Zone Surge Study, Boyle Engineering, Inc.; Hydropneumatic Storage Facility Evaluation (1990); Dr. C. Samuel Martin's - Evaluation of Surge Protection Needs (1992); Phase I Report: Network and Demand Improvements Surge Analysis (1994); Phase II Report: Calibration Scenario Development and Modeling (1994); Letter Reports I, II and III (1995); Potomac WFP Facility Plan (September, 2002).

**Specific Data**

Adverse pressure and vacuum conditions, resulting from surge, have been documented which include low pressure at the National Institute of Standards & Technology and the recurring problem of vacuum severe enough to disrupt service to the Potomac Manor Subdivision. Contamination of the water distribution system is possible when vacuum conditions occur. As water demands increase over time, a larger segment of the water distribution system will be impacted by vacuum conditions resulting from pump trips and the vacuum conditions experienced will be of greater severity. The hydropneumatic surge tanks will reduce the pressure variations caused by pump trips. Monitoring of pressures will be performed for a year after the surge tanks have been installed to determine if additional measures are needed to eliminate occurrences of vacuum conditions. Costs beyond six years are for surge tanks for the Montgomery High Zone, HG 660, if needed. The backwash system improvements involves increasing the size of the connection to the main zone piping from 24-inch to 36-inch diameter. Both the surge tanks and backwash system will share the new connection to the existing 78-inch diameter main piping.

**Cost Change**

Total project cost increased due to the change in scope.

**STATUS** Preliminary Design (WSSC Contract No. BF7592A88, ).

**OTHER**

The project scope has changed to include backwash system improvements. An independent third party analysis of the surge modeling

E. Annual Operating Budget Impact (000's)			FY of Impact
Program Costs	Staff .....		....
	Other .....		....
Facility Costs	Maintenance .....	76	....
	Debt Service .....	743	....
Total Costs.....		819	....
Impact on Water or Sewer Rate.....		2¢	....

**F. Approval and Expenditure Data (000's)**

Date First in Capital Program	FY 89
Date First Approved	FY 89
Initial Cost Estimate	6,581
Cost Estimate Last FY	9,414
Present Cost Estimate	10,533
Approved Request, Last FY	2,470
Total Expenditures & Encumbrances	1,097
Approval Request FY 05	3,403
Supplemental Approval Request Current FY (04)	

**G. Status Information**

Land Status:	No land or R/W involved
% Project Completion:	D-15%
Est. Completion Date:	FY 2006

**H. Map Map Reference Code:**

**MAP NOT AVAILABLE**

**D. DESCRIPTION & JUSTIFICATION (CONT.)**

**Agency Number: W - 73.12**

**Project Name: Potomac WFP Hydropneumatic Surge Tanks and Backwash System Improvements**

and of the alternatives considered to reduce surge has been completed. Expenditures shown in Block B are planning level estimates only and may increase or decrease. Upon completion of preliminary design, a more reliable estimate can be made.

**COORDINATION**

National Park Service.

**NOTE** This project supports 100% System Improvement.